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EXAMINER	
HIRL, JOSEPH P	

ART UNIT	PAPER NUMBER
2121	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/972,057	LEE, SHIH-JONG J.	
	Examiner	Art Unit	
	Joseph P. Hirl	2121	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *28 December 2004*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-17,20-22 and 24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-17,20-22 and 24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *05 October 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. This Office Action is in response to an AMENDMENT entered December 28, 2004 for the patent application 09/972,057 filed on October 5, 2001.

2. The First Office Action of September 29, 2004 is fully incorporated into this Final Office Action by reference.

Status of Claims

3. Claims 1, 5, 7, 8, 10-12, 14, 17, 20 and 22 are amended. Claims 18, 19 and 23 are cancelled. Claims 1-17, 20-22 and 24 are pending.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-17, 20-22 and 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berry et al in view of Acknowledged Prior Art (Data Mining Techniques, referred to as **Berry**; specification, p 10, l 15-16, referred to as **APA**).

Claim 1

Berry teaches a) Input an existing decision tree (**Berry**, p 252, l 9; p 258, l 5-14); (b) Input a set of training samples (**Berry**, p 253, l 6-7); (c) Determine statistics from the training samples for at least one non-terminal node and store in the decision tree structure (**Berry**, p 254, l 1-37; p 255, l 1-11; p 258, l 5-14; Examiner's Note (EN): subtrees are evaluated and hence the statistics are not discarded but stored in or with subject trees); (d) Determine statistics from the training samples for at least one terminal node and store in the decision tree structure (**Berry**, p 254, l 1-37; p 255, l 1-11; p 258, l 5-14; EN: subtrees are evaluated and hence the statistics are not discarded but stored in or with subject trees); (e) select regulation parameters (**Berry**, p 254, l 1-37; p 255, l 1-11).

Claim 2

Berry does not teach the statistics for at least one non-terminal node include mean distance. APA does teach the statistics for at least one non-terminal node include mean distance (**APA**, p 10, l 15-17). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Berry to establish statistical metrics to include mean distance. One of ordinary skill in the art would have been lead to make such a modification since statistical techniques provide useful tools to assess performance of data mining techniques.

Claim 3

Berry does not teach the statistics for at least one non-terminal node include distance standard deviation. APA does teach the statistics for at least one non-terminal

node include distance standard deviation (**APA**, p 10, l 15-17). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Berry to establish statistical metrics to include distance standard deviation. One of ordinary skill in the art would have been lead to make such a modification since statistical techniques provide useful tools to assess performance of data mining techniques.

Claim 4

Berry teaches the statistics for at least one terminal node include the likelihood value for a class (**Berry**, p 254, l 4-10; Examiner's Note (EN): likelihood is similar to probability which is similar to diversity).

Claim 5

Berry teaches (a) Input a sample (**Berry**, p 253, l 6); (b) Determine the likelihood values for at least one non-terminal node (**Berry**, p 255, l 6-11); (c) Determine the likelihood value for a branch to at least one terminal node (**Berry**, p 255, l 6-11); (d) Determine the confidence value for at least one class (**Berry**, p 256, l 4-7; EN: confidence is synonymous to error rate).

Claim 6

Berry teaches the likelihood values for at least one non-terminal node comprises a likelihood value for descending through the left branch and a likelihood value for descending through the right branch (**Berry**, p 254, l 4-10; EN: likelihood is similar to probability which is similar to diversity and the binary splits are left and right).

Claim 7

Berry teaches the confidence value for a class c is determined by summing over all terminal nodes with their multiplication of non-terminal node branch values and the likelihood value for class c at terminal node using the following formula:

$$\text{Confidence}_c(X_{input}) = \sum_{j \in \text{terminal nodes}} \prod_{s \in \text{branches to } j} L^s(X_{input}) L^j_{\text{class } c}.$$

(Berry, p 256, l 4-7).

Claim 8

Berry teaches (a) Determine the projected tree accuracies for a plurality of depths and a plurality of regulation parameter values (**Berry**, p 256, l 4-7); (b) Select the optimal depth that yields the highest projected tree accuracy (**Berry**, p 255, l 6-11; EN: optimum depth is established by diversity provided by the best splitter which established levels or depth); (c) Use the optimal regulation parameter value for the optimal depth (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11).

Claim 9

Berry teaches (a) Construct a regulation tree up to a given depth (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11); (b) Determine the projected tree accuracy (**Berry**, p 256, l 4-7); (c) Determine a regulation parameter value based on projected tree accuracy (**Berry**, p 254, l 14-28).

Claims 10, 12

Berry teaches (a) Input a training sample (**Berry**, p 253, l 6); (b) Input the true class of the training sample (**Berry**, p 248, Table 12.1); (c) Classify the input training

sample using a crisp decision method to determine its associated terminal node (**Berry**, p 248, l 3-12); (d) Update terminal node statistics (**Berry**, p 248, l 3-12).

Claim 11

Berry teaches the terminal node statistics include the total weighted number of samples at the terminal node n, N^n, and the weighted number of samples of each class c at the terminal node n, N^n_c (**Berry**, p 256, l 4-7).

Claim 13

Berry does not teach the non-terminal node statistic include mean distance and distance standard deviation. APA does the non-terminal node statistic include mean distance and distance standard deviation (**APA**, p 10, l 15-17). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the teachings of Berry to establish statistical metrics to include mean distance and distance standard deviation. One of ordinary skill in the art would have been lead to make such a modification since statistical techniques provide useful tools to assess performance of data mining techniques.

Claim 14

Berry teaches (a) Perform new regulation tree construction in addition to the original regulation tree (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11; p 258, l 5-14; p 259, l 1-15); (b) Perform a compound tree update (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11; EN: such is repeating the process since the old tree remains with its non-terminal and terminal nodes and new trees are created with the new data; see specification @ p 18, l 3-11).

Claim 15

Berry teaches (a) Input at least one sample from a new class (**Berry**, p 253, l 6); (b) Check to confirm the sample size is greater than the minimal required sample size for the new class (**Berry**, p 254, l 4-11); (c) Construct a new compound tree for all existing classes and the new class (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11).

Claim 16

Berry teaches (a) Input a new sample and its class (**Berry**, p 253, l 6); (b) Update all trees trained to include the input class (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11; EN: since this is not a new tree, the input class is resident in the old tree and the update or current information is a repeat of the initial process).

Claim 17

Berry teaches (a) Input a sample to be applied (**Berry**, p 253, l 6); (b) Apply the sample to all trees (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11; EN: repeat the initial process); (c) Combine the results from all trees (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11; EN: save each process).

Claims 20, 21

Berry teaches (a) Input a set of training samples (**Berry**, p 253, l 6); (b) Generate a new weight for each training sample (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11); (c) Generate a new tree using the new weight (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11).

Claim 22

Berry teaches (a) Input a sample to be applied (**Berry**, p 253, l 6); (b) Classify the input sample by the first tree (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11); (c) If the classification reliability > threshold, use the current result as the final result and stop (**Berry**, p 258, Fig. 12.9); (d) Else, classify the input sample by the focus tree and use the new result as the final result (**Berry**, p 258, l 4-13).

Claim 24

Berry teaches repeating multiple times to create multi-stage focusing trees (**Berry**, p 253, l 6-12; p 254, l 1-37; p 255, l 1-11; EN: all trees are multi-staged (levels via nodes) and are focusing since there are leaves that represent terminals ... end points).

Response to Arguments

6. The rejection of claim 23 under 35 USC 112, second paragraph, is withdrawn.

7. The rejection of claims 7 and 11 under 35 USC 112, first paragraph, is withdrawn.

8. The rejection of claims 1-22 and 24 under 35 USC 101 is withdrawn.

9. Applicant's arguments filed on December 28, 2004 related to Claims 1-22 and 24 have been fully considered but are not persuasive.

In reference to Applicant's argument:

Claim 1 (a) Berry (p.252, line 9) does not teach the input of an existing decision tree for post-processing. Neither did Berry suggest any tree regulation on an initially created (existing) tree. Current invention is patentably distinctive: from Berry.

Claim 1, step (a) is amended to clearly state the input is an existing decision tree.

(c) Berry (p. 254, lines 1-37, p 255, lines 1-11) does not teach the determination of statistics and store in the existing decision tree structure for tree regulation. Berry taught measures used to change the structure of the tree such as determining the best split of the tree. The measures are discarded after use. They are not stored in the tree. Current invention is patentably distinctive from Berry.

Claim 1, step (d) is amended to clearly state the statistics are stored in the decision tree Structure.

(e) Berry (p. 255, lines 27-28) does not teach the determination of statistics and store in the existing decision tree structure for tree regulation. Berry taught measuring error rate to assign class to a leaf. Current invention is patentably distinctive from Berry.

Claim 1, step (d) is amended to clearly state the statistics are stored in the decision tree structure.

(e) Berry (p. 254, lines 1-37, p 255, lines 1-11) does not teach select regulation parameters. Neither did it anticipate or suggest regulation parameters, Current invention is patentably distinctive from Berry.

Examiner's response:

Para 13 below applies. Berry teaches inputting an existing decision tree @ p 258, l 4-13. Berry maintains statistics to evaluate further tree improvements @ p 259, l 1-15. Statistics cannot be discarded since if they were, there would be not basis for further improvements. The error rate is the weighted sum of all of the leaves. To make such a calculation, such statistics must be arranged or kept, assigned to specific elements of the tree (leaves). Hence Berry stores the statistics with or in the decision trees that are evaluated. Berry's evaluating of the best subtree involves storing statistics in the existing decision tree structure for tree regulation. Regulation parameters can take many forms such as Berry's diversity @ p 254, l 1-28.

In reference to Applicant's argument:

Claims 2, 3 & 13 Applicant respectfully submits that Claim 2 and claim 3 are not anticipated by Berry and Berry does not motivate the post-processing statistics for those ordinary skilled in the art. In fact, Berry teaches away from the current invention, which is a post-processing step for decision quality regulation. This is because the measures of Berry are only for tree spiting that is for the initial generation of the decision trees. An ordinary skill in the art would have confined their methods to the initial generation rather than post-processing of tree due to the teaching of Berry. This is why even though many of the methods described in Berry have been disclosed for over 20 years (such as CART) yet no post processing statistics for existing decision trees such as the statistics in the current invention have been conceived in the prior arts.

Examiner's response:

Simply stated, Berry @ p 259 continues to develop the best subtree. Berry continues to post process as Berry continues to develop additional subtrees. Applicant has established in the applicant's specification that one of ordinary skill in the art could conceive of other methods to establish mean and standard deviation.

In reference to Applicant's argument:

Claim 4 Examiner Hirl stated that likelihood is similar to probability which is similar to diversity as in Berry (p. 254, lines 4-10). Applicant respectfully submits that the diversity of Berry is a measure for the potential splitter. The measure of potential splitter is only useful for the splitting of tree nodes in the initial construction of trees. Claim 4 is for the processing, statistics for existing decision trees which is patently distinctive from the diversity as in Berry.

Examiner's response:

Berry does post processing in the selection of advanced subtrees @ p 259, l 1-15.

In reference to Applicant's argument:

Claim 5 (a) Berry (p.253, line 6) does not teach the input of a sample with unknown class for tree application, Instead, Berry inputs the complete training set of preclassified records (known classes) for tree construction.

Examiner's response:

Berry has an evaluation dataset @ p259, l 1-15.

In reference to Applicant's argument:

Claim 5 (b), (c) Berry (p.255, lines 6-11) does not teach the determination of the likelihood values in tree application for a sample with unknown class. Instead, Berry taught the choose of the best splitter using decrease in diversity as the measure of goodness. The diversity is determined from training set of preclassified records (known classes) for tree construction.

Examiner's response:

Para 13. below applies. Claim 5 is written too broad to expect the Examiner to narrowly interpret the intention. First Office Action applies.

In reference to Applicant's argument:

Claim 5 (d) Berry (p.256, lines 4-7) does not leach the determination of the confidence values in tree application for a sample with unknown class. Instead, Berry taught the calculation of the error rate of an entire tree using the training set of preclassified records known classes for tree construction.

Examiner's response:

Para 13. below applies. Limitations appearing in the specification but not recited in the claim are not read into the claim. Limitations appearing in the specification but not recited in the claim are not read into the claim. Applicant's statements are not part of claim 5.

In reference to Applicant's argument:

Claim 6 Examiner Hirl stated that likelihood is similar to probability which is similar to diversity and the binary split are left and right as in Berry (p. 254, lines 4-10). Applicant respectfully submits that the diversity of Berry is a measure for the potential splitter. The measure of potential splitter is only useful for the splitting of tree nodes in the construction of trees. In claim 6, the likelihood value is for the regulation tree application of a sample with unknown class for tree.

Examiner's response:

Para 13. below applies. Measure of potential splitter is probability. Limitations appearing in the specification but not recited in the claim are not read into the claim. Applicant's comments are not part of claim 6.

In reference to Applicant's argument:

Claim 8 (a) Berry (p.256, lines 4-7) does not teach the determination of the projected tree accuracies for a plurality of depths and a plurality of regulation parameter values. Instead, Berry taught the calculation of the error rate of an entire tree at a fixed depth. The current invention uniquely defines regulation parameters that regulates the adjustable condition between the crisp tree and the probabilistic tree and weakens the likelihood values for terminal nodes having a small number of training samples.

Examiner's response:

Para 13. below applies. Limitations appearing in the specification but not recited in the claim are not read into the claim. First Office Action applies.

In reference to Applicant's argument:

Claim 8 (b) Examiner Hirl stated that optimum depth is established by diversity provided by the best splitter (Berry p.255, lines 6-11) which established levels or depth. Applicant respectfully submits that the best splitter only determines the best rule for splitter at a node. It does not determine the optimum depth. The optimum depth can only be established after the accuracies of a plurality of depths are assessed.

Examiner's response:

Para 13. below applies. Diversity establishes splitters which establishes depth. First Office Action applies.

In reference to Applicant's argument:

Claim 8 (c) Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) does not teach the use of optimal regulation parameter value for the optimal depth. The current invention uniquely defines regulation parameters that are completely new methods and are un-suggested in prior arts. Instead, Berry taught measures used to determining the best split of the tree.

Examiner's response:

Para 13. below applies. Limitations appearing in the specification but not recited in the claim are not read into the claim. Diversity establishes the optimum regulation parameter for the optimum depth. First Office Action applies.

In reference to Applicant's argument:

Claim 9 Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) does not teach the determination of a regulation parameter value based on projected tree accuracy. The current invention uniquely defines regulation parameters that are completely new methods and are un-suggested in prior arts. Instead, Berry taught measures used to determining the best split of the tree.

Examiner's response:

Para 13. below applies. Limitations appearing in the specification but not recited in the claim are not read into the claim. The CART diversity measure for economics anticipates the claims intent. First Office Action applies.

In reference to Applicant's argument:

Claims 10,12 (a) Berry (p. 253, line 6) inputs the complete training set. It does not teach the input of a single new training sample for update learning.

Examiner's response:

Para 13. below applies. Berry @ p 259, l 1-15 establishes three sets of data: test set, training set and evaluation set. First Office Action applies.

In reference to Applicant's argument:

Claims 10,12 (d) Berry (p. 248, lines 3-i2) does not teach the update of the terminal statistics stored in the regulation tree.

Examiner's response:

Para 13. below applies. Berry @ p 259, l 1-15 establishes three sets of data: test set, training set and evaluation set. Error rates are calculated and the best subtree is retained. The best subtree contains the terminal statistics recorded at the leaves. First Office Action applies.

In reference to Applicant's argument:

Claim 14 (a) Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) teaches the measures used to determining the best split of the tree. It is for the; construction of the original tree with the original classes rather than the construction of the new regulation tree construction in addition to the original regulation tree.

Examiner's response:

Para 13. below applies. Berry @ p 258 and p 259 teaches the evaluation of a pool of candidate subtrees which is the equivalent of developing new trees.

In reference to Applicant's argument:

Claim 14 (b) Examiner Hirl stated that the compound tree update is repeating the process of Berry (p.253, lines 6-12; p 254. lines 1-37; 1? 255, lines 1-11). The repeating tree construction with additional new classes is one of the essence of the invention and is non-obvious and un-suggested by Berry.

Examiner's response:

Para 13. below applies. See above comments.

In reference to Applicant's argument:

Claim 15 (a) Berry (p. 253, line 6) inputs the complete training set. It does not teach the incremental input of a sample from a new class. Update a regulation tree to include a new class after the regulation tree construction is a patentable new method.

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 determines a second preclassified dataset called the test set to select a pool of candidate subtrees which would have new classes.

In reference to Applicant's argument:

Claim 15 (b) Berry (p.253, lines 6-12; p 254, lines I-37; p 255, lines 1-11) does not teach the sample size confirmation. It teaches the measures used to determining the best split of the tree.

Examiner's response:

Para 13. below applies. Sample size confirmation is achieved by calculating the index of diversity for a set of records or sample size.

In reference to Applicant's argument:

Claim 15 (c) Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) does not teach the construction of a new compound tree for all existing classes and the new classes. It teaches the measures used to determining the best split of the tree only for the existing classes. Current invention is patentably distinctive from Berry.

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 inputs a new dataset with different records or classes and applies the test set to candidate trees which will identify (update) the candidate tree with the lowest overall error rate.

In reference to Applicant's argument:

Claim 16 (a) Berry (p. 253, line 6) inputs the complete training set. It does not teach the incremental input of a new sample. Update a regulation tree to include a new class after the regulation tree construction is a patentable new method and is un-suggested in prior arts.

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 inputs a new dataset with different records or classes and applies the test set to candidate trees which will identify (update) the candidate tree with the lowest overall error rate.

In reference to Applicant's argument:

Claim 16 (b) Examiner Hirl stated that the update or current information is a repeat of the initial process of Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11). The repeating tree construction with additional new classes and tree statistics update are among the essence of the invention and are non-obvious and un-suggested by Berry.

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 inputs a new dataset with different records or classes and applies the test set to candidate trees which will identify (update) the candidate tree with the lowest overall error rate.

In reference to Applicant's argument:

Claim 17 (a) Berry (p.253, line 6) does not teach the input of a sample with unknown class for tree application. Instead, Berry inputs the complete training set of preclassified records (known classes) for tree construction.

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 inputs a new dataset with different records or classes and applies the test set to candidate trees which will identify (update) the candidate tree with the lowest overall error rate.

In reference to Applicant's argument:

Claim 17 (b) Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) does not teach the application of a sample to a regulation tree and repeat the process. Instead, Berry taught measures used to

determining the best split of the tree in tree construction (not in tree application). Current invention is patentably distinctive from Berry.

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 inputs a new dataset with different records or classes and applies the test set to candidate trees which will identify (update) the candidate tree with the lowest overall error rate.

In reference to Applicant's argument:

Claim 17 (c) Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) does not teach the combination of the results from all trees which is a patentable new method and is un-. suggested in prior arts.

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 inputs a new dataset with different records or classes and applies the test set to candidate trees which will identify (update) the candidate tree with the lowest overall error rate. Results are combined to select the tree with the lowest overall error rate.

In reference to Applicant's argument:

Claims 20.21 Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) does not teach the generation of a new weight for each training sample. Berry only taught measures used to determining the best split of the tree.

Examiner's response:

Para 13. below applies. The best split requires appropriate weight that is predicated on the training sample.

In reference to Applicant's argument:

Claims 22 (a) Berry (p.253, line 6) does not teach the input of a sample with unknown class for tree application. Instead, Berry inputs the complete training set of preclassified records (known classes) for tree construction.

Examiner's response:

Para 13. below applies. Limitations appearing in the specification but not recited in the claim are not read into the claim.

In reference to Applicant's argument:

Claims 22 (b) Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) does not teach the . classification a sample to a first regulation tree. Instead, Berry taught measures used to determining the best split of the tree in tree construction (not in tree application).

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 inputs a new dataset with different records or classes and applies the test set to candidate trees. This obviously includes a first tree.

In reference to Applicant's argument:

Claims 22 (c) (d) Berry (p.258, Fig. 12.9 and lines 4-13) does not teach the conditionally selects the final result from the first tree and the focusing tree. Instead, Berry taught the selection of subtrees in tree construction (not in tree application).

Examiner's response:

Para 13. below applies. Limitations appearing in the specification but not recited in the claim are not read into the claim.

In reference to Applicant's argument:

Claims 24 the multi-stage focusing trees include multiple trees. Berry (p.253, lines 6-12; p 254, lines 1-37; p 255, lines 1-11) does not. teach the creation of multiple trees. It taught the creation of a single tree with multiple levels.

Examiner's response:

Para 13. below applies. Berry @ p 258, l 5-8 inputs a new dataset with different records or classes and applies the test set to candidate trees.

Examination Considerations

10. The claims and only the claims form the metes and bounds of the invention. "Office personnel are to give the claims their broadest reasonable interpretation in light of the supporting disclosure. *In re Morris,* 127 F.3d 1048, 1054-55, 44USPQ2d 1023, 1027-28 (Fed. Cir. 1997). Limitations appearing in the specification but not recited in the claim are not read into the claim. *In re Prater*, 415 F.2d, 1393, 1404-05, 162 USPQ 541, 550-551 (CCPA 1969)" (MPEP p 2100-8, c 2, l 45-48; p 2100-9, c 1, l 1-4). The Examiner has full latitude to interpret each claim in the broadest reasonable sense. Examiner will reference prior art using terminology familiar to one of ordinary skill in the art. Such an approach is broad in concept and can be either explicit or implicit in meaning.

11. Examiner's Notes are provided to assist the applicant to better understand the nature of the prior art, application of such prior art and, as appropriate, to further indicate other prior art that maybe applied in other office actions. Such comments are entirely consistent with the intent and spirit of compact prosecution. However, and unless otherwise stated, the Examiner's Notes are not prior art but a link to prior art that one of ordinary skill in the art would find inherently appropriate.

12. Unless otherwise annotated, Examiner's statements are to be interpreted in reference to that of one of ordinary skill in the art. Statements made in reference to the condition of the disclosure constitute, on the face of it, the basis and such would be obvious to one of ordinary skill in the art, establishing thereby an inherent prima facie statement.

13. Examiner's Opinion: Paras 10-12 apply. It is not apparent that the specification and the drawings contain subject matter that is novel and non obvious. Certainly, the claims fail to define a subject matter worthy of being patented. Applicant should review the full application and if the applicant wishes to continue, the applicant should consider an RCE and call the Examiner for a discussion on how to proceed. If the Examiner is convinced that the application contains patentable material, then appropriate constructive assistance will be provided on the pursuit of allowance. However, the applicant's instant response suggests that the application is not patentable.

Conclusion

14. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

15. Claims 1-17, 20-22 and 24 are rejected.

Correspondence Information

Any inquiry concerning this information or related to the subject disclosure should be directed to the Examiner, Joseph P. Hirl, whose telephone number is (571) 272-3685. The Examiner can be reached on Monday – Thursday from 6:00 a.m. to 4:30 p.m.

If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Anthony Knight can be reached at (571) 272-3687.

Any response to this office action should be mailed to:

Commissioner of Patents and Trademarks,

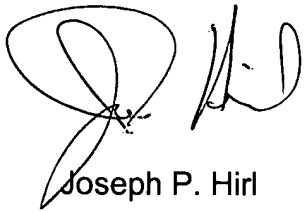
Washington, D. C. 20231;

or faxed to:

(703) 872-9306 (for formal communications intended for entry);

or faxed to:

(571) 273-3685 (for informal or draft communications with notation of "Proposed" or "Draft" for the desk of the Examiner).



Joseph P. Hirl

March 3, 2005